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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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EXAMINER

MCINTOSH III, TRAVISS C

ART UNIT

PAPER NUMBER

1623

MAIL DATE

DELIVERY MODE

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PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary	Application No. 10/583,573	Applicant(s) FARDIS ET AL.	
	Examiner TRAVISS C. MCINTOSH III	Art Unit 1623	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 December 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-28 and 35 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-28 35 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413) |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | Paper No(s)/Mail Date. _____ |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>See Continuation Sheet</u> . | 6) <input type="checkbox"/> Other: _____ |

Continuation of Attachment(s) 3). Information Disclosure Statement(s) (PTO/SB/08), Paper No(s)/Mail Date :7/22/08, 6/1/07, 1/28/07, 11/2/06.

DETAILED ACTION***Priority***

It is noted that the instant application claims priority to US Provisional Application 60/532,256. However, the '256 document fails to provide adequate support for the claims of the instant application wherein the '256 document does not provide the same bases as set forth herein. As such, the instant application is seen to get a priority date of 12/22/04.

Double Patenting

The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. A nonstatutory obviousness-type double patenting rejection is appropriate where the conflicting claims are not identical, but at least one examined application claim is not patentably distinct from the reference claim(s) because the examined application claim is either anticipated by, or would have been obvious over, the reference claim(s). See, e.g., *In re Berg*, 140 F.3d 1428, 46 USPQ2d 1226 (Fed. Cir. 1998); *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) or 1.321(d) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent either is shown to be commonly owned with this application, or claims an invention made as a result of activities undertaken within the scope of a joint research agreement.

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1-6, 9, 14-28, and 35 are rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-27 of U.S. Patent No. 7,432,272. Although the conflicting claims are not identical, they are not patentably distinct from each other because

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both applications are drawn to substantially overlapping compounds. It is noted the only difference between the genus of compounds of claim 1 of the instant application and claim 1 of '272 is the instant application also provides that R¹ is optionally alkyl, alkenyl, or alkynyl, in addition to cyano, azido, or fluoromethyl, which are in both applications. However, claim 9, 14, and 15 of the instant application limit the R¹ group to fluoromethyl, cyano, and azido respectively. It would be obvious to one of ordinary skill in the art at these groups are seen to be substantially overlapping.

Claim Rejections - 35 USC § 112

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

Claims 1-28 and 35 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for compounds of formula I and salts thereof, does not reasonably provide enablement for solvates thereof. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make the invention commensurate in scope with these claims.

As stated in the MPEP 2164.01(a), "There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement and whether any necessary experimentation is 'undue'." The court (*In re Wands*, 8 USPQ2d 1400 (1988)) established the following factors to be

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considered in determining whether a disclosure meets the enablement requirement of 35 U.S.C. § 112, first paragraph:

1) The nature of the invention –

The instant claims are drawn to carbocyclic nucleosides including solvates, and salts thereof, for the treatment of viral infections.

2) The state of the prior art –

The occurrence of hydrated or solvated crystal forms is widespread but by no means universal among drug substances. Some classes of drug substances form solvates and others do not. Byrn et al. Solid-State Chemistry of Drugs, 2d, Chapter 11 Hydrates and Solvates, 233-247, 1999. One aspect of solvate formation is that virtually any solvent can be involved; albeit in different capacity. For instance, some of the solvents used to form solvates are nonhydrogen-bonding solvents and serve only in a space-occupying capacity. Whereas some solvents are capable of hydrogen bonding, which can stabilize a crystal structure either by improving the packing or via intermolecular bonding. Byrn et al. at 234. Thus, solvent selection requires screening to determine different solvent systems for each potential drug.

As pointed out by Morissette et al., “Like the parent compound, pharmaceutical salts may exist in several polymorphic, solvated and/or hydrated forms.” Morissette et al. *Adv. Drug Delivery Rev.* 2004, 56, 275-300. Thus, the scope of the instant claims includes not only solvates according to a compound in the formula, but also solvates of the hypothetical salts of said compounds.

3) The predictability or unpredictability of the art –

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The formation of solvates is unpredictable. Stated by Byrn et al., "Because prediction of crystal structures is not yet generally possible, we must be content with examining the crystal structures of compounds after the fact in looking for explanations of why solvates do or do not form. On doing so, however, we are left with only vague impression..." (Emphasis added). Byrn et al. at 234. Although the reference mentions solvates, the same level of predictability is true in the instant case dealing with a crystalline compound as a salt. Pointed out in Rouhi, "[n]o method yet exists to predict the polymorphs of a solid compound with significant certainty. The search for polymorphs is largely and empirical exercise." A.M. Rouhi, Chem. & Eng. News, 02/24/2003, 81(8), 32-35.

Morissette et al. agrees, "Despite more than a century of research, the fundamental mechanisms and molecular properties that drive crystal form diversity, specifically the nucleation of polymorphic forms, are not well understood. As a result, predictive methods of assessing polymorphic behavior of pharmaceutical compounds by ab initio calculations remain a formidable challenge. Even in cases where the existence of a crystalline form is predicted, the stability relative to other crystalline packing arrangements has been difficult to estimate with accuracy. Moreover, the prediction of packing structures for multicomponent (e.g., solvates, hydrates, co-crystals) or ionic systems is not yet possible. Due to these limitations, solid form discovery remains an experimental exercise, where manual screening methods are employed to explore form diversity of a compound." Morissette et al. at pp.276-7.

4) The amount of direction or guidance presented –

The instant specification fails to provide adequate guidance for solvates of any compounds. The amount of guidance or direction to enable an invention is inversely related to

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the amount of knowledge in the state of the art as well as the predictability in the art. MPEP 2164.03 (quoting *In re Fisher*, 427 F.2d 833, 839, 166 USPQ 18 24 (CCPA 1970)). As identified supra, the formation of solvates is unpredictable. The direction or guidance present in Applicants' Specification does not provide direction to different forms of any compounds.

5) The presence or absence of working examples –

There are no examples that compounds according to the formula may form solvates as indicated.

6) The breadth of the claims –

Is incommensurate in scope with the disclosure. Specifically, solvates are outside of the breadth of the disclosure in light of the unpredictability based on the lack of guidance and working examples.

7) The quantity of experimentation necessary –

Includes the adequate selection of the proper solvent and the crystallization technique. As pointed out in *Byrn et al.* in Table 11.3 there are numerous solvents to choose from. One of ordinary skill in the art only has a "vague impression" on explanations of why solvates do or do not form. Thus, because of the unpredictability of the art, the process is trial and error or screening to determine the proper solvent system. Further, each crystalline form must be characterized, tested for stability, and bioavailability. The traditional methods for the study of solid form diversity of active compounds are inherently slow, and before suggesting a form for development, scientists may have to carry out a few dozen crystallization experiments and possibly prepare a handful of different salts of a compound. *Morissette et al.* at p. 276. In the case of a Markush group, hundreds to thousands of experiments may be required.

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8) The level of skill in the art –

The level of ordinary skill in the art may be found by inquiring into: (1) the type of problems encountered in the art; (2) prior art solutions to those problems; (3) the rapidity with which innovations are made; (4) the sophistication of the technology; and (5) the education level of active workers in the field. *Custom Accessories, Inc.*, 807 F.2d at 962. All of those factors may not be present in every case, and one or more of them may predominate. *Envtl. Designs, Ltd. v. Union Oil Co.*, 713 F.2d 693, 696 (Fed.Cir.1983). Based on the typical education level of active workers in the field of synthetic organic chemistry, as well as the high degree of sophistication required to solve problems encountered in the art, the Examiner finds that a person of ordinary skill in the art would have at least a college degree in the field of organic chemistry and at least four years of work experience, i.e. a masters or doctorate level scientist.

Conclusion - The Examiner recognizes that the level of skill in the art of crystallization is quite high. Nonetheless, the Examiner recognizes that experiments in crystallization produce, at best, unpredictable results. From a reading of Applicant's disclosure and the publications of record, it is impossible to determine how many solvates of each compound or which compounds included within the general Markush-type of said formula will form solvates. Because of the aforementioned reasons, a person of ordinary skill in the art could not practice the claimed invention herein, or a person of skill in the art could practice the claimed invention herein only with undue experimentation and with no assurance of success. The Examiner suggests an amendment that deletes the terms "solvates" from the claims.

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Claims 23-28 are rejected under 35 U.S.C. 112, first paragraph, because the specification, while being enabling for: treating a viral infection; treating symptoms or effects of a viral infection; treating HCV; treating the symptoms or effects of HCV; and inhibiting RNA-dependent RNA polymerase does not reasonably provide enablement for inhibiting the viral infections or HCV, preventing symptoms of viral infections of HCV, or inhibiting all viral enzymes. The specification does not enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to use the invention commensurate in scope with these claims without undue experimentation.

Undue experimentation is a conclusion reached by weighing the noted factual considerations set forth below as seen in *In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1988). A conclusion of lack of enablement means that, based on the evidence regarding a fair evaluation of an appropriate combination of the factors below, the specification, at the time the application was filed, would not have taught one skilled in the art how to make and/or use the full scope of the claimed invention without undue experimentation.

These factors include:

- (A) The breadth of the claims;
- (B) The nature of the invention;
- (C) The state of the prior art;
- (D) The level of one of ordinary skill;
- (E) The level of predictability in the art;
- (F) The amount of direction provided by the inventor;
- (G) The existence of working examples; and
- (H) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

The breadth of the claims/Nature of the Invention:

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The claims are drawn to methods of treating or preventing all symptoms of viral or HCV infections, inhibiting viral or HCV infections, and inhibiting viral enzymes such RNA-dependent RNA polymerase. In the absence of an explicit definition in Applicant's specification, "inhibiting" the viral infections is seen to mean preventing the viral infections. "Prevention" as recited in the instant claims, is interpreted to mean the complete and total blocking of all symptoms of a disorder for an indefinite period of time. Any therapy which merely reduces the number or severity of symptoms, or which is effective for a period shorter than the subject's remaining lifespan, is considered to be ineffective at preventing a disorder.

The state of the prior art:

There are no known agents which prevent viral infections, such as HIV or HCV. Also, there are no known agents which inhibit all viral enzymes.

The level of predictability in the art:

Regarding prevention, prevention of a disease is not the same as treatment of said disease. In order to prevent a disease, as opposed to merely delaying or reducing its symptoms, a dosing must either render the subject completely resistant to said disease after a single treatment or a limited number of treatments, or else, when continued indefinitely, continue to completely suppress the occurrence of said disease. In order to practice a preventative method, one of skill in the art must know the answer to several questions in addition to the effectiveness of the therapy in short-term relief of symptoms, including: 1) What is the duration of a single course of therapy? How often must the therapy be administered to completely suppress the disease? 2) Does the subject develop tolerance to the therapy over time? Does the disease eventually progress to a point where the therapy is unable to completely suppress all symptoms? For

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example, will a metastatic cancer eventually adapt to overcome treatments directed to preventing it from metastasizing into the bone? Or will a case of osteoporosis or rheumatoid arthritis ultimately progress to a point where symptoms develop regardless of which therapy is administered. 3) What are the long-term effects of the therapy? Does it cause progressive damage to the kidneys, liver, or other organs? Does the active agent accumulate in the subject's tissues? Is the minimum dose necessary to completely prevent the disease safe for long-term administration? Are there any steps that can be taken to reduce side effects? Additionally, because various physiological systems are interdependent and affect one another, any hypothetical preventative treatment would have to be broad-based and treat all of the various causes of a disorder. For example, because osteoporosis is, in the majority of cases, caused at least in part by a reduction in estrogen levels, a true preventative treatment for osteoporosis must be capable of preventing or reversing menopause in a subject. For this reason, many therapies which are suitable for short-term relief of symptoms are not suitable for lifelong prevention of disease. For example, antibiotics, chemotherapeutics, and antiviral drugs are not normally administered to healthy subjects in order to prevent the development of infection or cancer. Furthermore, a tissue can degenerate for a variety of reasons, including but not limited to, exposure to toxins, chronic viral infection, autoimmune attack, and deposition of amyloid protein. To be fully successful, a preventative method would have to guard against all of these possible insults.

The amount of direction provided by the inventor:

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No guidance is given in the specification suggesting any reason to believe that administration of the claimed compounds to healthy individuals would completely prevent all future infections.

The existence of working examples:

No working examples are given for the prevention of any disease. Note that lack of working examples is a critical factor to be considered, especially in a case involving an unpredictable and undeveloped art such as the treatment of broad categories of disease with a single agent. See MPEP 2164.

The quantity of experimentation needed to make or use the invention based on the content of the disclosure:

As mentioned above, the short-term usefulness of a therapy for relief of symptoms is no guarantee of its long-term usefulness for prevention of disease. Because no guidance is given for the use of the claimed therapeutic method for the long-term prevention of disease, one skilled in the art wishing to practice the invention would be unable to do so without first gathering information as to the long-term effectiveness of the therapy. In particular, one skilled in the art, in order to practice the invention for prevention of disease, would need to know whether the preventative effect remains potent over the long term. In order to answer these questions in the absence of any existing data, one skilled in the art, in order to practice the invention, would undertake long-term animal tests, preferably over a period of years, preferably involving a relatively long-lived experimental animal such as dogs or monkeys, or a human clinical trial. Animal experiments include, along with induction of the disease state, administration of the potential pharmaceutical compound and collection and analysis of data, additional burdens associated with compliance with animal welfare regulations, care, feeding, and other

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maintenance of the animals, dissection of dead animals to collect data, and disposal of dead animals after the protocol is finished. Administering the claimed compounds for a period of years to a suitable subject population is an undue amount of experimentation needed in order to practice the full range of the claimed invention. As prevention in the full sense is an extremely high bar for any clinical outcome, there is no reason to believe that the therapy would be successful, and any actual success would be a surprising and unpredictable result.

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 23 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 23 is indefinite wherein the claim states "in an animal (e.g. a mammal)". It is unclear if applicants are intending the claim to be limited to only mammals, or to any animal.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Claims 1-3, 7-8, 16-28, and 35 are rejected under 35 U.S.C. 102(b) as being anticipated by Kato et al. ("Stereoselective Synthesis", Chem. Pharm. Bull., 47(9), 1256-64, 1999).

Kato et al. discloses compounds 15(a) and (b) on page 1257 which anticipate the compounds of the instant application wherein: B is 2-amino-6-chloropurine (which also meets the limitations of a substituted guanine), and R¹ is alkyl (methyl and C₉H₁₉). The product including 15(a), 15(b), and 15(c) is seen to meet the limitations of being a composition of claims 17-22. Since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald et al.*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). This class of compounds is taught to be effective in treating viral infections (see abstract).

Claims 1-2, 4, 7-8, 14, 16-28, and 35 are rejected under 35 U.S.C. 102(a) as being anticipated by Hegedus et al. (J. Org. Chem., 2004, 69, pp. 8492-95).

Hegedus discloses deprotected compounds 13a, 14a, 15a, and 12b in scheme 6 which anticipate the claims of the instant application where base is thymine or adenine and X is methyl or cyano. Since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald et al.*, 619 F.2d 67, 205

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USPQ 594 (CCPA 1980). This class of compounds is taught to be effective in treating viral infections (see paragraph 1).

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

Claims 1-28 and 35 are rejected under 35 U.S.C. 103(a) as being unpatentable over US 7,589,078 in view of Hegedus et al. as applied above.

The claims of the instant application are drawn to various carbocyclic 4'-substituted nucleosides and methods of treating viral infections with the same.

Hegedus discloses deprotected compounds 13a, 14a, 15a, and 12b in scheme 6 which anticipate the claims of the instant application where base is thymine or adenine and X is methyl or cyano. Since the Office does not have the facilities for preparing the claimed materials and comparing them with prior art inventions, the burden is on Applicant to show a novel or

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unobvious difference between the claimed product and the product of the prior art. See *In re Best*, 562 F.2d 1252, 195 USPQ 430 (CCPA 1977) and *In re Fitzgerald et al.*, 619 F.2d 67, 205 USPQ 594 (CCPA 1980). This class of compounds is taught to be effective in treating viral infections (see paragraph 1). What is not taught is the various other functional groups set forth in the dependent claims.

US 7,589,078 bridges the gap as it teaches compounds of formula IV in column 3, which overlap with those of the instant application wherein X is CH₂; R^{3a and 3b} are H; R³ is alkyl or alkenyl; and B is one of various bases. The patent teaches their compounds are useful for treating viral infections including HCV (see column 5, lines 52-67) and can be used in combination with various additional anti-viral agents (see column 6, lines 26-57).

It would have been obvious to one of ordinary skill in the art at the time of the invention to modify the compounds of Hegedus as done in US 7,589,078 to obtain the compounds of the instant application with these references before them. Obviousness based on similarity of structure and function entails motivation to make claimed compound in the expectation that compounds similar in structure will have similar properties. Where the prior art compounds essentially bracket the claimed compounds and are known to be effective as well known pesticides, for example, one of ordinary skill in the art would be motivated to make the claimed compounds in searching for new pesticides. See ***In re Payne***, 606 F.2d 303, 203 USPQ 245, 254-55 (CCPA 1979).

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to TRAVISS C. MCINTOSH III whose telephone number is (571)272-0657. The examiner can normally be reached on M-F 9:30-6:00.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Shaojia A. Jiang can be reached on 571-272-0627. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/Traviss C McIntosh III/
Primary Examiner, Art Unit 1623
March 28, 2010